

Use Attainability Analysis

for

WBID 0382 Rollins Creek

Submitted by
SES Inc.

to

Missouri Department of Natural Resources
Water Protection Program

Date received: November 14, 2007

Field Data Sheets for Recreation Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	Rollins Cr.
Missouri Water Body Identification (WBID) Number:	382
8 digit HUC code: 10300101	County: Ray
Upstream Legal Description (from Table H):	T51N R29W SEC 13
Downstream Legal Description (from Table H):	T50N R28W SEC 3
Number of sites evaluated:	4
List all site numbers, listed consequently upstream to downstream:	1, 2, 3, 4

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.
Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

Facility Name(s) and Permit Number(s):
countryside meadows WWTF
MO0119822

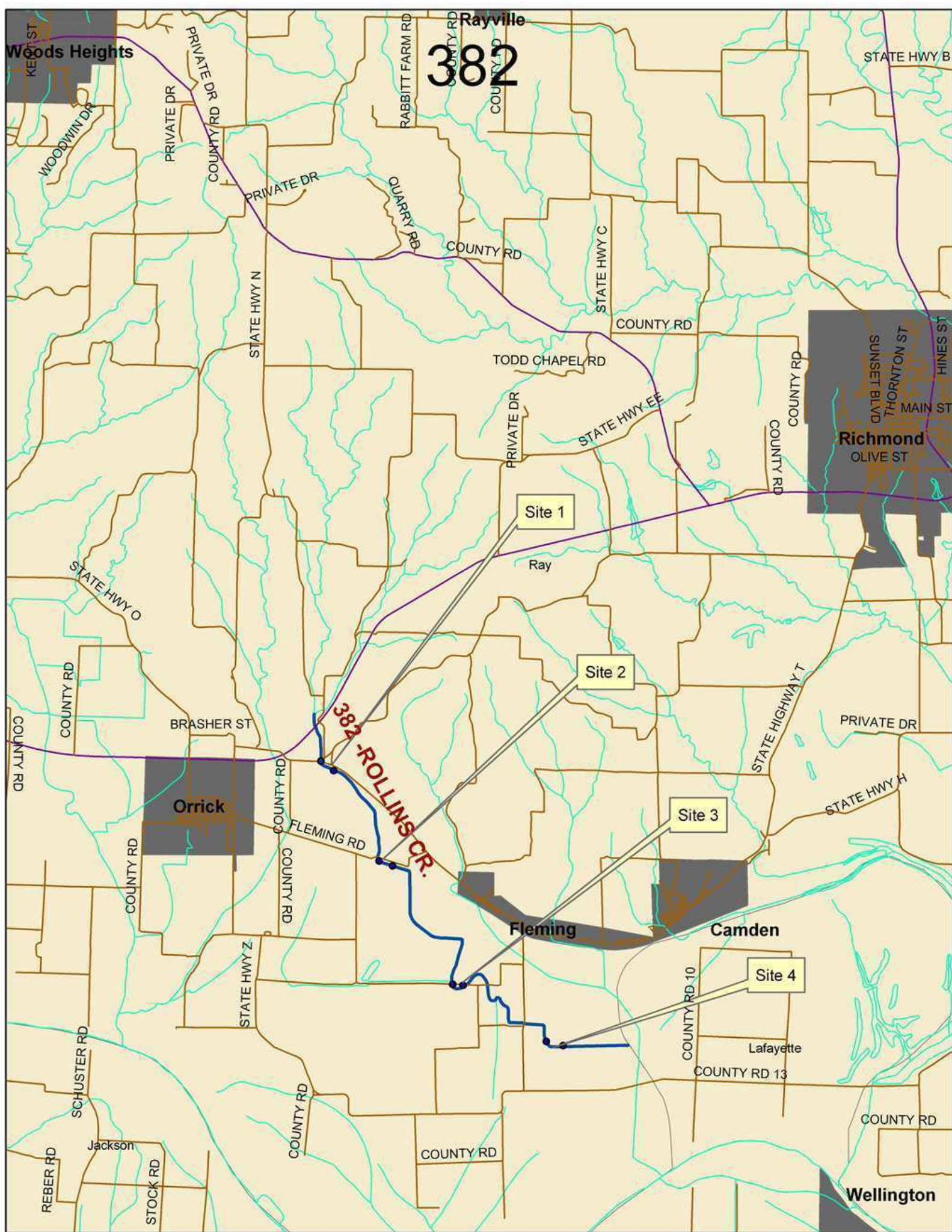
III. UAA Surveyor (please print legibly)

Name of Surveyor: Gilisa Gould	Telephone Number: 9133070054
Organization/Employer: SES, Inc.	

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: Gilisa Gould

Date: 10.22.07



WBID # 382
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.16.07 10:50am	Site Location Description (e.g. road crossing):
Personnel: G. Gould and L. Brown	Hwy T crossing
Current Weather Conditions: Rain	Facility Name: Countryside Meadows WWTF
Weather conditions for the past 10 days: 3.09 inches	Permit Number: mo0119822
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0405081	4341906		4.26	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0405312	4341726		7.32	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1	downstream	2	upstream	119	downstream
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
120	upstream				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 382
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
50	25	25			

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # ____382____
Site # ____1____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Gilisa Gould _____ Date of Survey: _____ 10/16/2007 _____

Organization: _____ SES, Inc. _____ Position: _____ Field Team Leader _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>382</u> Site #: <u>1</u> Estimated Channel Incision: <u>5.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0405081</u> UTM Y: <u>4341906</u> +/- <u>2.4</u> (meters) 11 UTM X: <u>0405312</u> UTM Y: <u>4341726</u> +/- <u>5.5</u> (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.16.07</u> Time: <u>10:50am</u> Dissolved Oxygen: <u>10</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.6</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.3	0.05	0.5	0.25	0.4	0.01	0.4	0.01	0.5	0.01	0.6	0.05	0.2	0.01	0.5	0.01	0.6	0.05	0.5	0.10	0.2	0.01
2	0.6	0.05	1.0	0.50	0.8	0.05	0.8	0.05	1.0	0.05	1.2	0.15	0.4	0.00	1.0	0.01	1.2	0.25	1.0	0.40	0.4	0.05
3	0.9	0.10	1.5	0.65	1.2	0.05	1.2	0.05	1.5	0.10	1.8	0.10	0.6	0.00	1.5	0.05	1.8	0.40	1.5	0.45	0.6	0.05
4	1.2	0.05	2.0	0.55	1.6	0.10	1.6	0.10	2.0	0.15	2.4	0.10	0.8	0.01	2.0	0.05	2.4	0.40	2.0	0.40	0.8	0.05
5	1.5	0.10	2.5	0.50	2.0	0.15	2.0	0.10	2.5	0.15	3.0	0.05	1.0	0.05	2.5	0.10	3.0	0.40	2.5	0.40	1.0	0.10
6	1.8	0.05	3.0	0.40	2.4	0.20	2.4	0.15	3.0	0.10	3.6	0.05	1.2	0.10	3.0	0.10	3.6	0.40	3.0	0.30	1.2	0.05
7	2.1	0.05	3.5	0.30	2.8	0.15	2.8	0.15	3.5	0.10	4.2	0.05	1.4	0.10	3.5	0.10	4.2	0.35	3.5	0.25	1.4	0.05
8	2.4	0.00	4.0	0.25	3.2	0.05	3.2	0.10	4.0	0.10	4.8	0.05	1.6	0.05	4.0	0.10	4.8	0.20	4.0	0.25	1.6	0.05
9	2.7	0.01	4.5	0.10	3.6	0.01	3.6	0.05	4.5	0.05	5.4	0.01	1.8	0.01	4.5	0.05	5.4	0.15	4.5	0.05	1.8	0.01
Right Bank	3.0	0.00	5.0	0.00	4.0	0.00	4.0	0.00	5.0	0.00	6.0	0.00	2.0	0.00	5.0	0.00	6.0	0.00	5.0	0.00	2.0	0.00
Feature Type	riffle		pool		pool		pool		pool		pool		riffle		pool		pool		pool		riffle	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Gilisa Gould Date: 10/22/07

WBID # 382
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10.19.07 12:50pm	Site Location Description (e.g. road crossing):
Personnel:	L. Brown and G. Gould	Fleming Rd crossing
Current Weather Conditions:	clear	Facility Name: Countryside Meadows WWTF
Weather conditions for the past 10 days:	3.19 inches	Permit Number: MO0119822
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0406144	4340068		3.4	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0406392	4339984		4.9	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
121	downstream, T1	122	upstream, T1	123	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
124	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 382
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input checked="" type="checkbox"/> Other:
Comments: Near railroad				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
20	20	40	20		

Aquatic Vegetation:

None

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					Brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 382
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Gilisa Gould Date of Survey: 10.19.07

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>382</u> Site #: <u>2</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0406144</u> UTM Y: <u>4340068</u> +/- <u>3.4</u> (meters) 11 UTM X: <u>0406392</u> UTM Y: <u>4339984</u> +/- <u>4.9</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>	Dissolved Oxygen Date: <u>10/19/07</u> Time: <u>12:50pm</u> Dissolved Oxygen: <u>8.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>15.7</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.05	0.4	0.05	0.4	0.10	0.6	0.15	0.6	0.25	0.7	0.35	0.5	0.10	0.6	0.30	0.7	0.10	0.6	0.25	0.5	0.20
2	1.0	0.05	0.8	0.10	0.8	0.25	1.2	0.30	1.2	0.45	1.4	0.45	1.0	0.05	1.2	0.35	1.4	0.15	1.2	0.20	1.0	0.45
3	1.5	0.01	1.2	0.15	1.2	0.25	1.8	0.35	1.8	0.50	2.1	0.45	1.5	0.15	1.8	0.35	2.1	0.15	1.8	0.15	1.5	0.60
4	2.0	0.10	1.6	0.15	1.6	0.10	2.4	0.35	2.4	0.55	2.8	0.40	2.0	0.20	2.4	0.30	2.8	0.15	2.4	0.30	2.0	0.55
5	2.5	0.10	2.0	0.15	2.0	0.10	3.0	0.40	3.0	0.55	3.5	0.45	2.5	0.10	3.0	0.35	3.5	0.10	3.0	0.35	2.5	0.50
6	3.0	0.15	2.4	0.10	2.4	0.05	3.6	0.40	3.6	0.35	4.2	0.40	3.0	0.15	3.6	0.40	4.2	0.05	3.6	0.30	3.0	0.50
7	3.5	0.15	2.8	0.05	2.8	0.05	4.2	0.40	4.2	0.20	4.9	0.30	3.5	0.15	4.2	0.35	4.9	0.10	4.2	0.20	3.5	0.35
8	4.0	0.10	3.2	0.05	3.2	0.01	4.8	0.25	4.8	0.05	5.6	0.20	4.0	0.15	4.8	0.20	5.6	0.10	4.8	0.10	4.0	0.35
9	4.5	0.05	3.6	0.05	3.6	0.01	5.4	0.20	5.4	0.01	6.3	0.10	4.5	0.05	5.4	0.05	6.3	0.05	5.4	0.15	4.5	0.15
Right Bank	5.0	0.00	4.0	0.00	4.0	0.00	6.0	0.00	6.0	0.00	7.0	0.00	5.0	0.00	6.0	0.00	7.0	0.00	6.0	0.00	5.0	0.00
Feature Type (riffle, run, or pool)	pool		riffle		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07

WBID # 382
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10.19.07	2:00pm	Site Location Description (e.g. road crossing):
Personnel:	L. Brown and G. Gould		
Current Weather Conditions:	clear	Facility Name:	Countryside Meadows WWTF
Weather conditions for the past 10 days:	3.19 inches	Permit Number:	MO0119822
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0407493	4337808		4.6	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0407683	4337792		2.1	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
125	downstream, T1	126	upstream, T1	127	downstream, T1
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
128	upstream, T1				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 382
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input checked="" type="checkbox"/> Other:
Comments: crop field				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt 40	% Mud/Clay 60	% Bedrock
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Aquatic Vegetation:

None

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 382
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Gilisa Gould Date of Survey: 10/19/2007

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>382</u> Site #: <u>3</u> Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0407493</u> UTM Y: <u>4337808</u> +/- <u>4.6</u> (meters) 11 UTM X: <u>0407683</u> UTM Y: <u>4337792</u> +/- <u>2.1</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>																Dissolved Oxygen						
																Date: <u>10/19/07</u> Time: <u>2:00pm</u> Dissolved Oxygen: <u>6.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>19.3</u> (°C)						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.7	0.05	0.8	0.05	0.7	0.05	0.7	0.10	0.6	0.10	0.7	0.25	0.7	0.05	0.7	0.10	0.7	0.10	0.7	0.15	0.7	0.05
2	1.4	0.15	1.6	0.20	1.4	0.30	1.4	0.25	1.2	0.20	1.4	0.30	1.4	0.10	1.4	0.15	1.4	0.15	1.4	0.20	1.4	0.25
3	2.1	0.30	2.4	0.35	2.1	0.40	2.1	0.30	1.8	0.25	2.1	0.35	2.1	0.20	2.1	0.15	2.1	0.25	2.1	0.35	2.1	0.35
4	2.8	0.30	3.2	0.40	2.8	0.40	2.8	0.45	2.4	0.30	2.8	0.35	2.8	0.30	2.8	0.15	2.8	0.35	2.8	0.40	2.8	0.45
5	3.5	0.35	4.0	0.35	3.5	0.40	3.5	0.40	3.0	0.40	3.5	0.25	3.5	0.35	3.5	0.10	3.5	0.40	3.5	0.25	3.5	0.30
6	4.2	0.40	4.8	0.35	4.2	0.30	4.2	0.30	3.6	0.40	4.2	0.20	4.2	0.35	4.2	0.05	4.2	0.35	4.2	0.20	4.2	0.30
7	4.9	0.30	5.6	0.30	4.9	0.20	4.9	0.25	4.2	0.20	4.9	0.15	4.9	0.30	4.9	0.10	4.9	0.35	4.9	0.15	4.9	0.15
8	5.6	0.20	6.4	0.15	5.6	0.10	5.6	0.20	4.8	0.15	5.6	0.10	5.6	0.20	5.6	0.10	5.6	0.20	5.6	0.10	5.6	0.05
9	6.3	0.05	7.2	0.01	6.3	0.05	6.3	0.10	5.4	0.05	6.3	0.01	6.3	0.10	6.3	0.05	6.3	0.10	6.3	0.05	6.3	0.05
Right Bank	7.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07

WBID # 382
 Site # 4

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time:	10.19.07	2:30pm	Site Location Description (e.g. road crossing):
Personnel:	L. Brown and G. Gould		off of Buist Rd
Current Weather Conditions:	clear	Facility Name:	Countryside Meadows WWTF
Weather conditions for the past 10 days:	3.19 inches	Permit Number:	MO0119822
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>			

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0409209	4336767		4.0	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0409515	4336689		4.0	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
129	downstream, T1	130	upstream, T1	131	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
132	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 382
 Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt 30	% Mud/Clay 70	% Bedrock
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Aquatic Vegetation:

80% grasses in water channel

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 382
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Gilisa Gould Date of Survey: 10.19.07

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>382</u> Site #: <u>4</u> Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0409209</u> UTM Y: <u>4336767</u> +/- <u>4</u> (meters) 11 UTM X: <u>0409515</u> UTM Y: <u>4336689</u> +/- <u>4</u> (meters) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>																Dissolved Oxygen						
																Date: <u>10/19/07</u> Time: <u>2:30pm</u> Dissolved Oxygen: <u>7.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>18.6</u> (°C)						
Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	1.1	0.30	1.1	0.25	1.1	0.15	1.3	0.15	1.0	0.25	0.8	0.30	0.9	0.25	1.0	0.15	0.8	0.25	0.8	0.10	0.9	0.20
2	2.2	0.45	2.2	0.30	2.2	0.30	2.6	0.30	2.0	0.45	1.6	0.45	1.8	0.30	2.0	0.45	1.6	0.30	1.6	0.25	1.8	0.25
3	3.3	0.65	3.3	0.30	3.3	0.50	3.9	0.50	3.0	0.50	2.4	0.50	2.7	0.50	3.0	0.50	2.4	0.50	2.4	0.45	2.7	0.50
4	4.4	0.70	4.4	0.45	4.4	0.75	5.2	0.55	4.0	0.70	3.2	0.50	3.6	0.50	4.0	0.65	3.2	0.70	3.2	0.60	3.6	0.65
5	5.5	0.70	5.5	0.65	5.5	0.75	6.5	0.60	5.0	0.60	4.0	0.50	4.5	0.45	5.0	0.70	4.0	0.60	4.0	0.60	4.5	0.60
6	6.6	0.55	6.6	0.45	6.6	0.45	7.8	0.60	6.0	0.30	4.8	0.45	5.4	0.30	6.0	0.65	4.8	0.45	4.8	0.40	5.4	0.50
7	7.7	0.40	7.7	0.20	7.7	0.30	9.1	0.60	7.0	0.25	5.6	0.25	6.3	0.20	7.0	0.60	5.6	0.30	5.6	0.25	6.3	0.40
8	8.8	0.30	8.8	0.20	8.8	0.15	10.4	0.35	8.0	0.25	6.4	0.20	7.2	0.20	8.0	0.50	6.4	0.20	6.4	0.25	7.2	0.35
9	9.9	0.20	9.9	0.15	9.9	0.15	11.7	0.10	9.0	0.20	7.2	0.20	8.1	0.15	9.0	0.45	7.2	0.20	7.2	0.25	8.1	0.20
Right Bank	11.0	0.00	11.0	0.00	11.0	0.00	13.0	0.00	10.0	0.00	8.0	0.00	9.0	0.00	10.0	0.00	8.0	0.00	8.0	0.00	9.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

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All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.09.07

WBID# 0382



Site# 1 Photo ID# 1, Downstream



Site# 1 Photo ID# 2, Upstream



Site# 1 Photo ID# 119, Downstream



Site# 1 Photo ID# 120, Upstream

WBID# 0382



Site# 2 Photo ID# 121, Downstream T1



Site# 2 Photo ID# 122, Upstream T1



Site# 2 Photo ID# 123, Downstream T11



Site# 2 Photo ID# 124, Upstream T11

WBID# 0382



Site# 3 Photo ID# 125, Downstream T1



Site# 3 Photo ID# 126, Upstream T1



Site# 3 Photo ID# 127, Downstream T1



Site# 3 Photo ID# 128, Upstream T1

WBID# 0382



Site# 4 Photo ID# 129, Downstream T1



Site# 4 Photo ID# 130, Upstream T1



Site# 4 Photo ID# 131, Downstream T11



Site# 4 Photo ID# 132, Upstream T11